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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,799	03/29/2004	Ace R. Collier	SESF	2773

7590 11/17/2004

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EXAMINER	
PECHHOLD, ALEXANDRA K	
ART UNIT	PAPER NUMBER
3671	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/811,799	COLLIER, ACE R.	
	Examiner	Art Unit	
	Alexandra K Pechhold	3671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Marked-up drawings*.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because of the language used, single spacing, and figure included. See MPEP § 608.01(b).

2. The spacing of the lines of the specification is such as to make reading and entry of amendments difficult. New application papers with lines double spaced on good quality paper are required.

3. The claims and specification are replete with errors and formatting problems. But the Examiner has found the applicant's claims to contain allowable subject matter. Therefore, the Examiner is providing the applicant with a new Specification, Abstract, and new Claims, in order to put the application in condition for allowance. The applicant should consider the following new papers presented, which include a new Abstract, Specification, and Claims. If the applicant is in agreement, then he should *submit exact copies of the following pages in his response*. If the applicant wants to make changes to anything the Examiner wrote, please make a notation as to what should be changed. Also, applicant is reminded to *submit replacement formal Drawings* making the necessary changes to comply with the Draftsman's objections and the Examiner's notations.

Drawings

4. The drawings are objected to because:

- The Specification was lacking any mention of the reference numerals shown in the Drawings. But even the reference numerals in the Drawings are confusing, since, for example, Fig. 6 has reference numeral (1) pointing to two different features; and reference numeral (2) in Fig. 3 looks like it's the rope, and in Figs. 6 and 7 looks like it's the base plate. In order to clarify these inconsistencies, the Examiner has numbered or renumbered the features in the Drawings - see the attached marked-up Drawing sheets. The reference numerals need to be consistent among all the Figures and in the Specification, where the Examiner has added the corresponding reference numerals.
- Note the separate sheets with the Draftsman's comments on the Drawing deficiencies.
- Applicant should submit replacement formal Drawings, which incorporate the corrected reference numeral as indicated by the Examiner in the attached, marked-up drawings, and also comply with the Draftsman's comments (see attached sheet).

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheets should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 2 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

7. The claims are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claims must be in one sentence form only. Note the format of the claims in the patents cited.

The following new, proposed claims 3 and 4 are drafted by the examiner and considered to distinguish patentably over the art of record in this application, and are presented to applicant for consideration in the following pages.

If the proposed Specification, Claims, and Abstract below are acceptable to the applicant, please RESUBMIT the following pages in your response to this Office Action, along with your NEW, REPLACEMENT DRAWINGS.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexandra Pechhold whose telephone number is (703) 305-0870. The examiner can normally be reached on Mon-Thurs. from 8:00am to 5:30pm and alternating Fridays from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached on (703)308-3870. The fax phone number for this Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1113.

Thomas B. Will
Supervisory Patent Examiner
Group 3600

AKP
11/15/04

Automobile Wheel and Track Snare

FIELD OF THE INVENTION

The invention relates to an apparatus to disable vehicles.

BACKGROUND OF THE INVENTION

Every year persons are killed in high-speed motor vehicle chases, such as when police are forced into chasing fleeing suspects. The victims of these high-speed chases include police officers, suspects, members of the public, and members of the military.

DESCRIPTION OF THE PRIOR ART

Various road barriers and tire piercing structure has been utilized in the prior art to prevent vehicles from fleeing the police. An example of a prior art tire piercing apparatus is in U.S. Pat. No. 4,473,948 to Chadwick, where a base plate includes a plurality of pins projecting upwards of the base plate to prevent an automobile from being driven. U.S. Pat. No. 4,382,714 to Hutchison invention is a vehicle-disabling device adapted to project a plurality of spike-like devices to puncture one or more tires of a fleeing vehicle. Such spike-like elements secured to bases by either a strand, cord, or short length of chain are evident in the prior art.

SUMMARY OF THE INVENTION

What is required is a method and apparatus that can be used to halt a suspect's motor vehicle in advance of a police chase, rendering a high-speed chase unnecessary.

In its preferred embodiment, the wheel and track snare consists of a folding deployment board, seen in Fig. 2, with a hinge in the middle. The board is about ten feet long and one or two feet wide, though the measurements can be approximated depending on the immediate requirements, since the device can be assembled in a very short time.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a side view of the base plate.

Fig. 2 is a view of the deployment board with hinges for deployment in front of a fleeing vehicle.

Fig. 3 is a view of a device laid out in front of an approaching vehicle.

Fig. 4 is an isometric projection of a base plate with a sleeve for the cable, and screw-type barbs projecting from the plate.

Fig. 5 is a view showing a cable with loops coiling around the wheels' control arms and drive axles.

Fig. 6 is a view showing cable snare gripping a wheel of a vehicle.

Fig. 7 is a view of a vehicle tire on a spiked base plate to facilitate spike penetration.

Fig. 8 is a view of the cable snare locking onto the wheels of a vehicle.

Fig. 9 is a view of the base plates on a folding deployment board.

Fig. 10 is a view of another embodiment for use with a tank, showing a snare cable entwined around a track and drive sprocket wheel using grappling hooks to disable the tank.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The wheel and track snare apparatus is designed to quickly and effectively stop a moving vehicle (V) with rubber tires (T). In another embodiment shown in Figure 10, the snare can be used on a track-driven vehicle (TV), such as a tank. To facilitate disabling of a track-driven vehicle, the base plates (2) are equipped with grapping hooks (6).

The snare operates to harness the control arms and drive axles of the wheels of the vehicle (V), while piercing the tires (T) with barbs (1), in order to disable the vehicle (V). The snare consists of a folding deployment board (4) with a hinge (H) in the middle, as shown in Figures 2 and 9. A 30-foot long and 0.5-inch diameter wire rope or cable (3) is removably fastened onto the deployment board by a plurality of clips, in a configuration having two loops in order to engage each tire (T). The removable connection allows the cable (3) to separate from the deployment board (4) when struck by a moving vehicle (V). The wire rope (3) is threaded through a plurality of steel base plates (2), preferably 1/8 inch thick, by drawing the rope (3) through a guide tube (7) that is welded to the lower surface of each plate (2) as shown in Figures 1, 4, and 7. A wire rope or cable (3) is preferred to using a chain. Each steel base plate (2) is

equipped with four or five barbs (1) in a screw-type configuration that are mounted on a swivel collar to aid the turning of the barb (1) into the solid rubber of the tire (T). As the tires (T) of a vehicle (V) approach plates (2) as shown in Figure 3, the angle of the barbs (1) facilitate direct piercing into the tires (T) while the cable (3) surrounds the tires (T). The cable (3) is fashioned with a sliding noose, as shown in Figures 4, 5, 6, 8, and 9. The base plates (2) with the barbs (1) are forced into the tire (T) of the moving vehicle (V) causing the cable (3) to wrap around the control arms and drive axles of the wheels, as illustrated in Figures 5 and 6. This action of using the vehicle's own power generated by the spinning tires (T) creates a lasso-effect, causing the noose to tighten as shown in Figure 5, thereby disabling the vehicle's control arms and drive axles and causing the wheels to seize.

ABSTRACT

A vehicle disabling and stopping device that will bring a vehicle to a quick stop regardless of the wheel or track configuration. The device comprises an aircraft-type cable or wire rope laced through guide tubes welded onto base plates. The cable ends are fashioned into a running bowline or noose on a deployment board in a configuration intended to choke and hold vehicle tire wheels and control arms. The base plates have two to four tire probes attached thereto to be embedded into the vehicle tires, or in the base of a track driven vehicle, grappling hooks are used. When a vehicle engages the device, the probes lock onto the solid or inflated tire. On a track driven vehicle, the grappling hooks lock onto the track shoe and drive sprocket wheels. The cable ends are fashioned with a running bowline using a double clevis for heavy vehicles. The cable coils around spinning wheels and track, shorting the cable until it chokes the wheel control arms, drive axles, and sprocket wheels.

CLAIMS

This listing of claims shall replace all prior versions and listings of claims in this application.

1. (Cancelled)

2. (Cancelled)

3. (New) An apparatus for engaging wheels of a moving vehicle and stopping the vehicle, the vehicle having tires with control arms and drive axles, the apparatus comprising:

a 10 foot long and 1 to 2 foot wide deployment board having a hinge in a central portion,

a 30 foot long, 0.5 inch diameter wire rope removably fastened onto said deployment board by a plurality of clips for allowing said wire rope to separate from said deployment board when struck by said moving vehicle,

said wire rope attached to a plurality of 4 inch by 8 inch by 1/8 inch steel plates, each said plate having an upper surface and a lower surface,

a guide tube welded onto the lower surface of each said plate,

said wire rope threaded through each guide tube on each plate for maintaining said wire rope in connection with said plates,

a plurality of barbs welded onto the upper surface of each said plate,

said wire rope configured into a shape of two sliding loops on said deployment board, one loop for each wheel of the vehicle,

whereby each loop engages a tire, creating a lasso effect, and forcing said plurality of barbs on said plates into the tires of the vehicle, causing the cable to wrap around the wheel and control arms, thereby using the vehicle's own power to generate the lasso effect to disable the vehicle's control arms and drive axles, and causing the wheels to seize and/or deflate.

4. (New) A method of engaging wheels of a moving vehicle and stopping the vehicle, the vehicle having tires with control arms and drive axles, the method comprising:

providing a plurality of 4 inch by 8 inch by 1/8 inch steel plates, said steel plates each having an upper surface and a lower surface,

mounting a plurality of barbs onto the upper surface of each said plate,

attaching a guide tube to the lower surface of each plate by welding,

threading a 0.5 inch diameter and 30 foot long wire rope through each of said guide tubes,

placing said wire rope having a plurality of said steel plates thereon onto a 10 foot long and 1 to 2 foot wide deployment board having a hinge in a central portion thereof,

laying said wire rope on said deployment board in a configuration having two sliding loops, one loop to engage each wheel, and removably fastening said wire rope onto said deployment board by a plurality of clips, and

placing said deployment board with attached said wire rope on a ground surface in front of a moving vehicle,

whereby each said loop engages a wheel of the vehicle, creating a lasso effect, forcing said plurality of barbs on the plates into the tires of the vehicle and causing said wire rope to wrap around the wheel and control arms,

thereby using the vehicle's power to generate the lasso effect to disable the control arms and the drive axles of the vehicle, and causing the wheels to seize and/or deflate.

COLLIER

~~CLAIM 2.~~

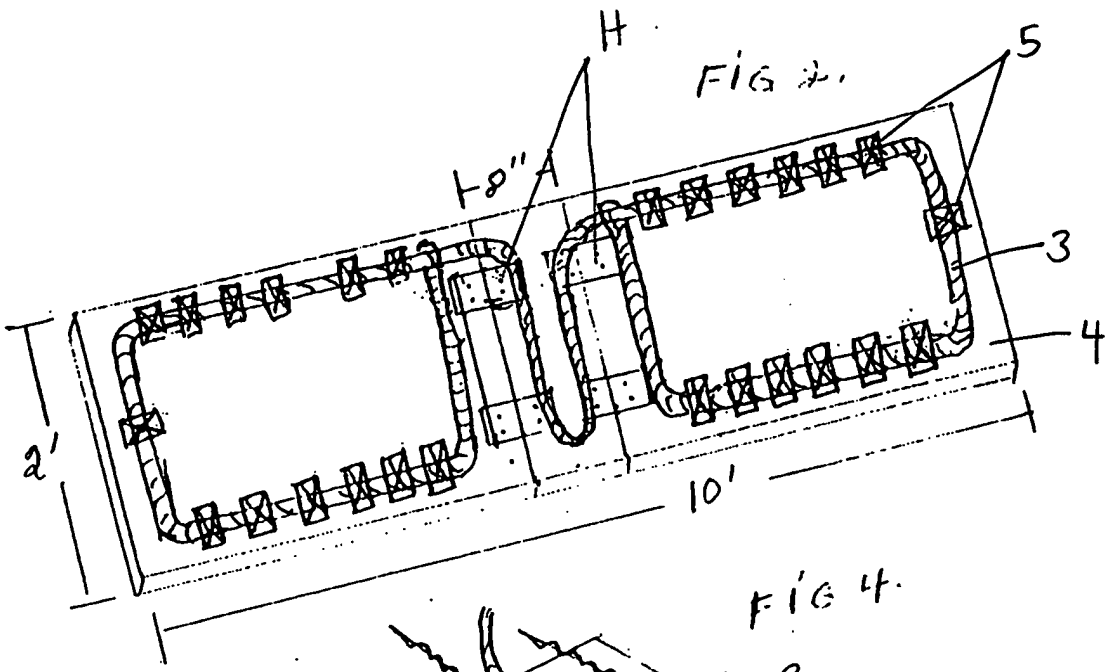


FIG 2.

FIG 4.

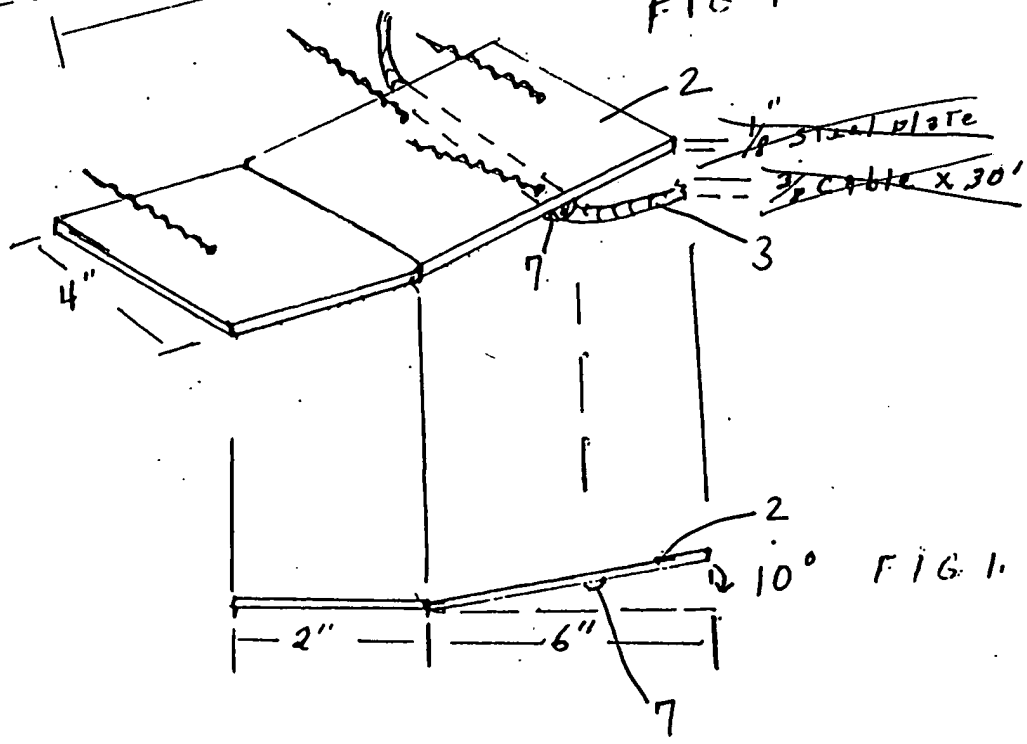


FIG 1.

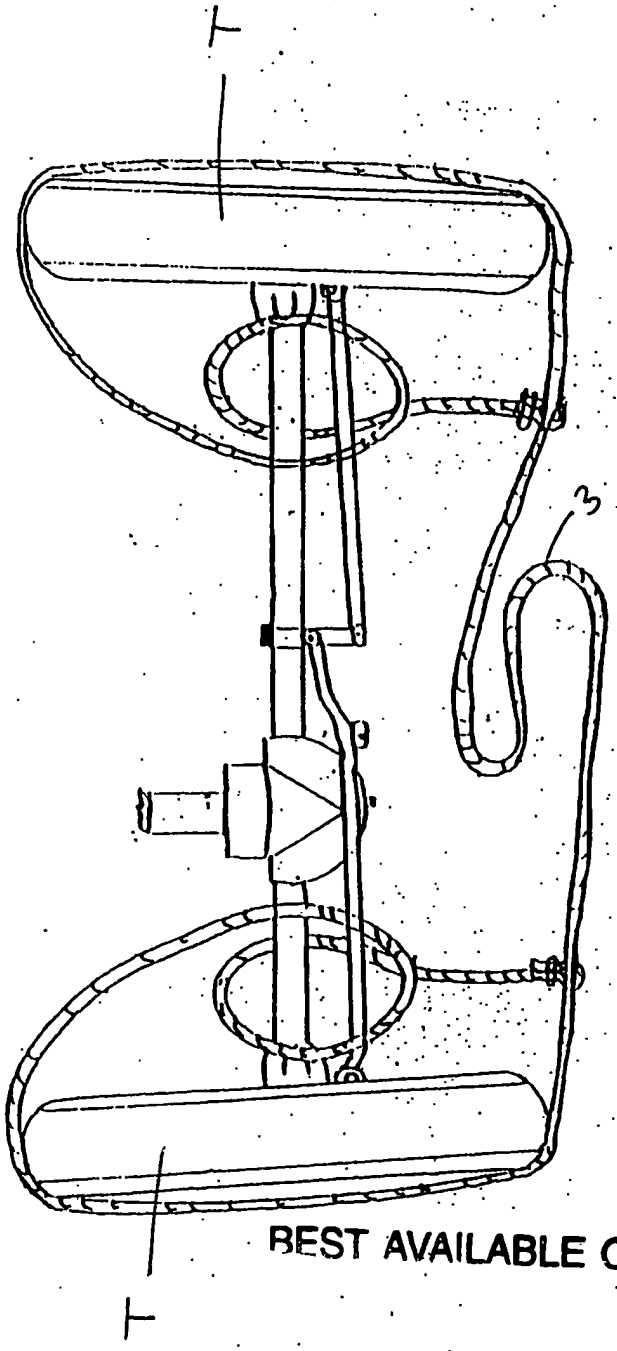


FIG. 5

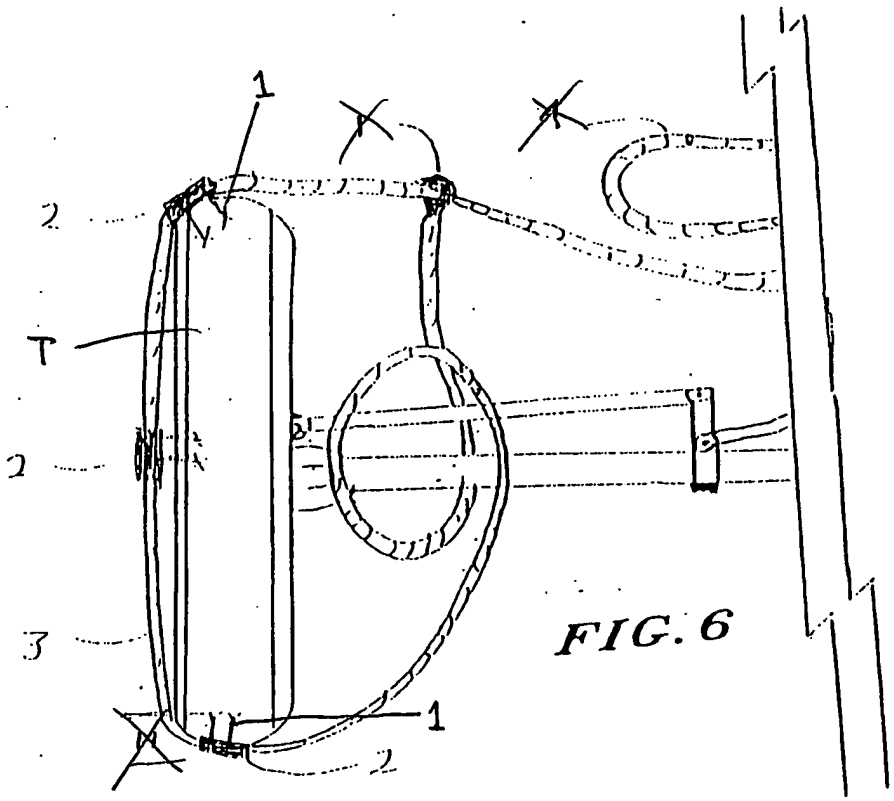


FIG. 6

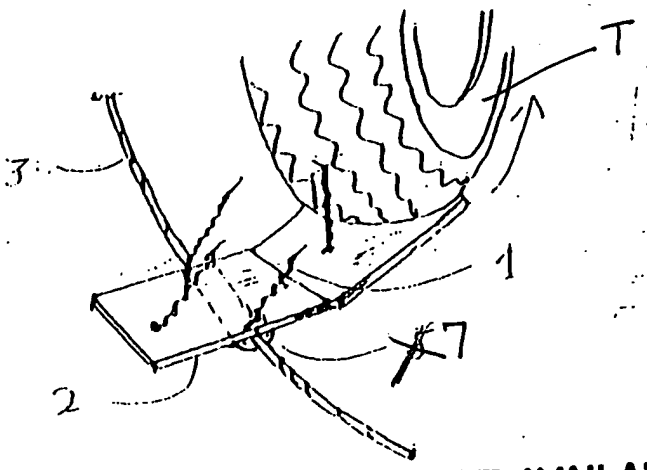


FIG.7

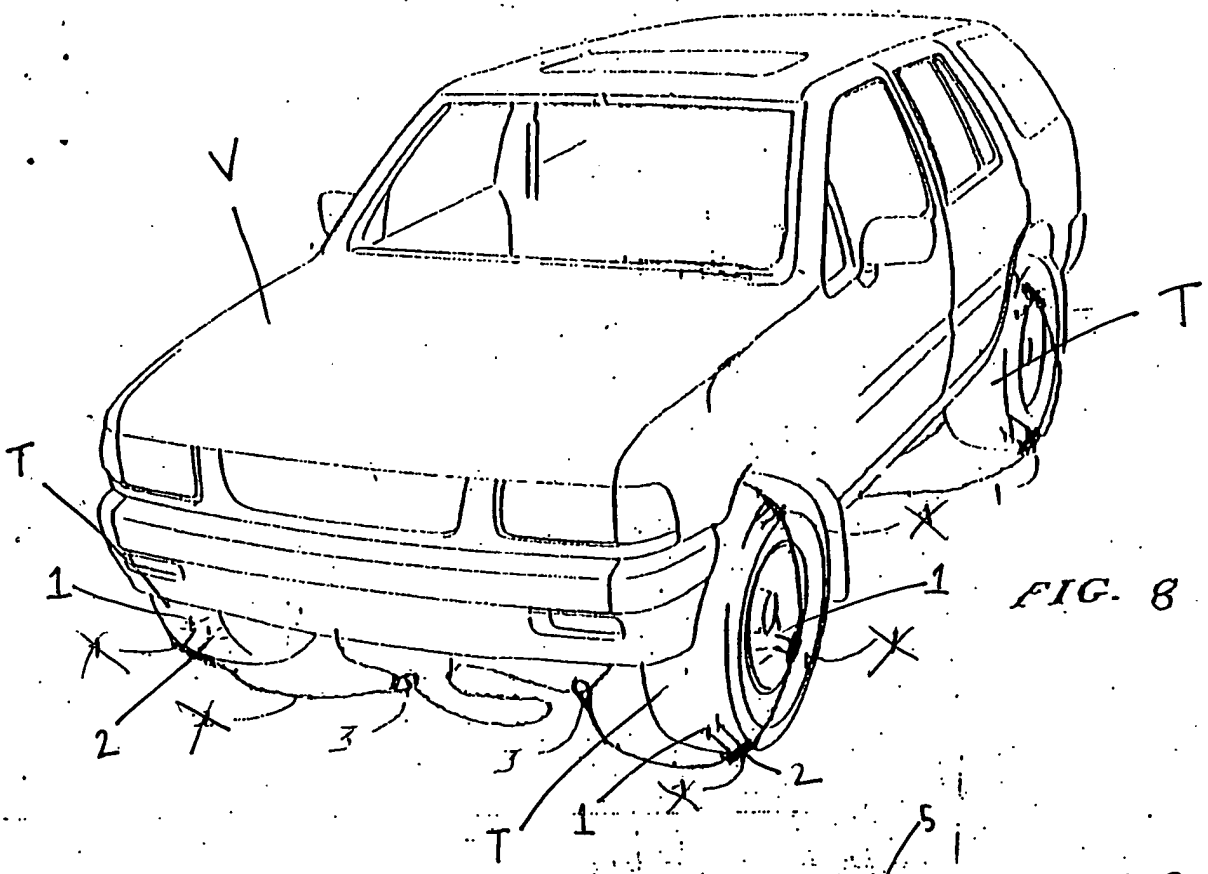


FIG. 8

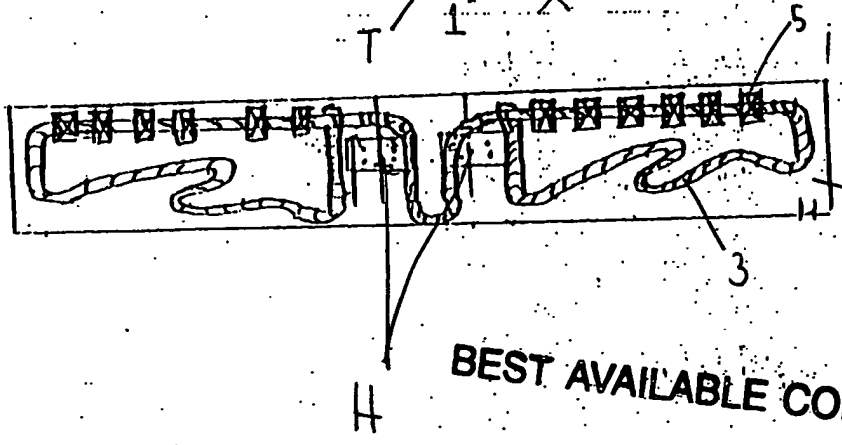
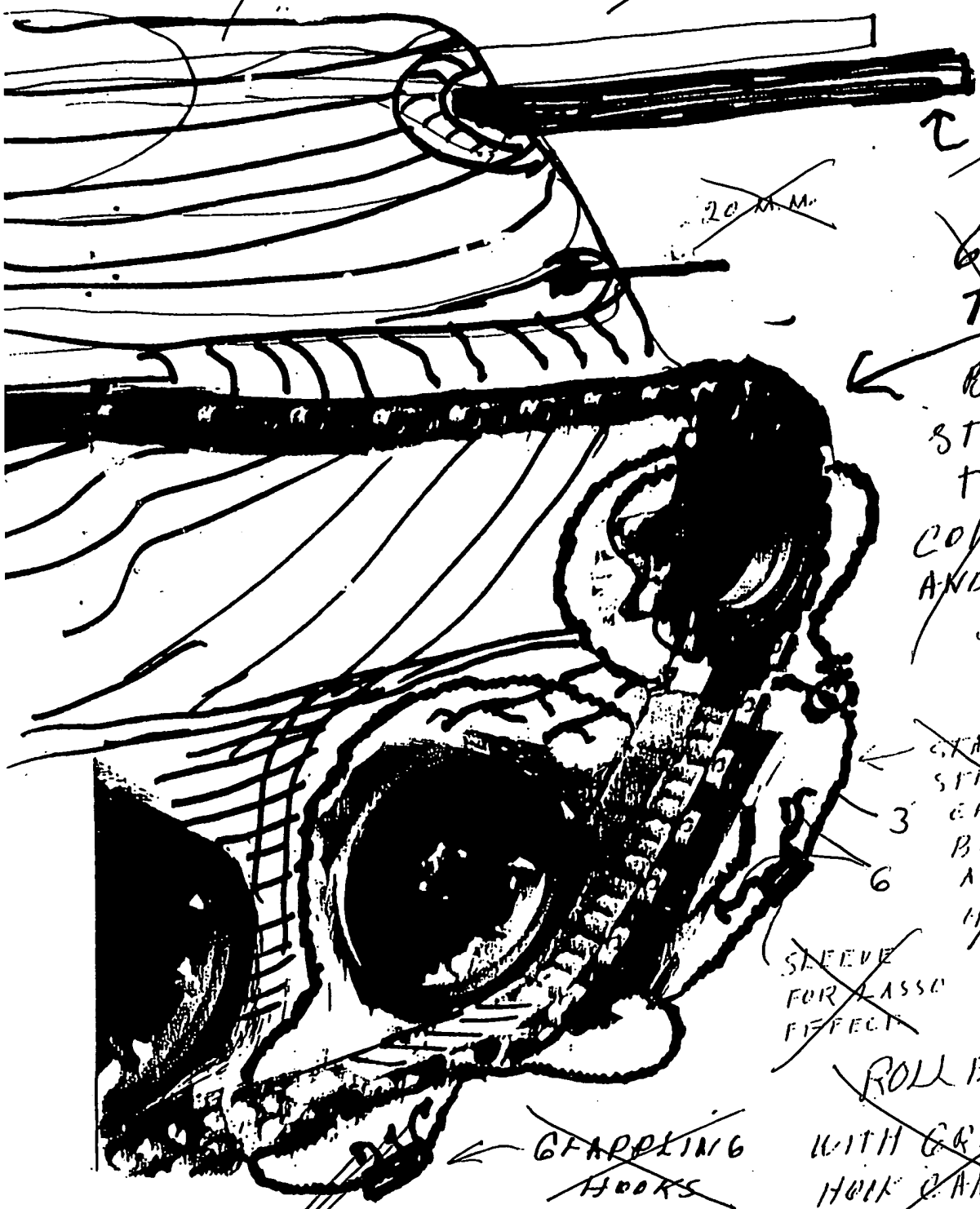


FIG 9

COLLIER

FIG 10. ~~CLAIM 43~~



~~STAINLESS STEEL CABLE WITH BASE PLATE AND GRAPLING HOOKS~~

~~SLEEVE FOR LASSO EFFECT~~

ROLLED CABLE WITH GRAPPLING HOOK CAN BE DEPLOYED BY AIR DRIFT